

## SECTION 05 3113

### STEEL FLOOR DECKING

\*\*\*\*\*

#### LANL MASTER SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Structural POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

\*\*\*\*\*

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Steel floor deck system.

##### 1.2 DESIGN REQUIREMENTS

- A. Design steel roof deck in accordance with SDI Design Manual for Composite Decks, Form Decks, and Roof Decks.

##### 1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01 3300, Submittal Procedures:

- 1. Certificates of compliance for:

- a. Steel deck.
- b. Sheet metal for ancillary materials.
- c. Self-drilling, self-tapping screws (mechanical fasteners).
- d. Welders, in accordance in with AWS D1.1 for welders who will perform field welding.

- 2. Shop drawings including the following information:

- a. Materials furnished including accessories.
- b. Splices and connections.
- c. Erection plan.

3. Catalog data for:
  - a. Metal deck.
  - b. Self-drilling, self tapping screws (mechanical fasteners).
  - c. Touch-up paint.
4. Test data and design calculations to provide documentation of performance for mechanical fasteners.

#### 1.4 QUALITY ASSURANCE

- A. Conform to SDI Design Manual for Composite Decks, Form Decks, and Roof Decks.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle metal roof deck:
  1. With equipment of adequate capacity.
  2. Without overstressing or permanently damaging material.
  3. Without damaging finish.
- B. Deliver manufactured materials in original unopened packages, containers, or bundles with manufacturers' label intact and legible.
- C. Store all materials off the ground, under cover and away from damp surfaces.
- D. Remove damaged, unlabeled, or unsatisfactory material which does not meet this specification from the job site.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Steel Deck
  1. Provide sheet steel, for deck which is required to be galvanized, conforming to ASTM A446, Grade [ A ], [ C ], or [ E ], with a minimum yield strength of  $F_y = 33,000$  psi with G90 galvanized coating conforming to ASTM A525.
  2. Provide sheet steel, for deck which is required to be painted, conforming to ASTM A611, Grade [ C ], or [ D ], with a minimum yield strength of  $F_y = 33,000$  psi.
  3. Deck type, profile and section properties are shown on the Drawings. The information stated establishes minimum acceptable values. Alternate sections, profiles and/or designs may be submitted for approval.

4. Provide venting slots in deck to receive light weight insulating concrete.

B. Acoustic Steel Deck

1. Provide a composite acoustic deck with a NRC of [ 0.70 ] when tested in accordance with ASTM C432, [ 20 ] gage sheet steel with G90 galvanized coating conforming to ASTM A525, [ 1 1/2 ] inches deep, perforated with manufacturer's standard holes. Deck type, profile, and section properties are shown on the drawings. The information stated establishes minimum acceptable values. Alternative sections, profiles and/or designs may be submitted for review.

C. Primer

1. Provide primer and touch-up primer conforming to SSPC 15, Type 1, red oxide, for nongalvanized surfaces.
2. Provide touch-up primer conforming to SSPC 20, Type 1, inorganic, for galvanized surfaces.

D. Welding Materials

1. Provide welding electrodes complying with the requirements of AWS D1.3.
2. Provide [ 14 ] gage weld washers where required.

E. Mechanical Fasteners

1. Provide Number [ 12 ] Tek Fasteners by ITW Builder, Itasca, Illinois with ultimate capacities equal to or greater than the following values:
  - a. Pullout in [ 3/16 ] inch thick steel: [ 3400 ] pounds.
  - b. Shear, fastening [ 20 ] gage steel to [ 20 ] gauge steel: [ 750 ] pounds.
  - c. Force to pull [ 20 ] gage steel over head of fastener: [ 1400 ] pounds.

F. Accessories

1. Provide steel accessories that are a standard item of the steel deck manufacturer fabricated with steel of the same type and finish as the deck.
2. Provide manufacturer's standard flute closure of closed cell foam rubber, 1 inch thick, to fit selected deck profile.

## 2.2 FABRICATION

- A. Shop fabricate decking and accessories to exact lengths and shapes.
- B. Fabricate deck sheets to be formed identically and so each sheet registers smoothly with adjacent sheets.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Erect metal decking in accordance with SDI Design Manual for Composite Decks, Form Decks, and Roof Decks.
- B. Erect metal decking in accordance with the approved erection drawing and in accordance with the manufacturer's instructions.
- C. Welding
  - 1. Perform all welding in accordance with AWS D1.3.
  - 2. Provide weld washers for deck in accordance with manufacturer's requirements.
  - 3. Weld in accordance with the diaphragm requirements stated on the Drawings.
  - 4. Avoid burning through the deck while field welding to supports.
- D. Mechanical Fasteners
  - 1. Install connections with mechanical fasteners in accordance with the manufacturer's instructions and the approved erection drawings.
- E. Provide 1 1/2 inch minimum bearing on steel support members. Align and level on supports.
- F. Provide 4 inch minimum bearing on masonry support members. Align and level on supports.
- G. Reinforce all holes that interrupt more than 1 rib.
- H. Install all accessories shown on the approved erection drawings.
- I. Weld shear stud connectors through steel deck to structural members below.
- J. Install concrete stops at floor edges and openings.
- K. Seal deck joints, lap ends, and penetrations with sealant.

### 3.2 CLEAN-UP AND FINISH TOUCH-UP

- A. After erection, remove weld spatter, grease and oil from decking.
- B. Immediately after welding deck in place, touch-up welds, burned areas, and surface coating damage. Use prime paint specified in Part 2.

END OF SECTION

\*\*\*\*\*

Do not delete the following reference information:

\*\*\*\*\*

FOR LANL USE ONLY

This project specification is based on LANL Master Specification 05 3113 Rev. 0, dated January 6, 2006.